



In the claims:

1. (Currently amended) A method for hydrolyzing ~~α -galactose~~ α -glycosidic bonds capable of being hydrolyzed by an α -galactosidase comprising:

contacting a compound having an ~~α -galactose~~ the α -glycosidic bond with an effective amount of an enzyme having at least a 70% amino acid identity to an amino acid sequence set forth in SEQ ID NO: 4 and having α -galactosidase activity.

C2 2. (Currently amended) The method according to claim 1 wherein the enzyme has at least 90% amino acid identity to the amino acid sequence set forth in SEQ ID NO: 4 and has α -galactosidase activity.

3. (Currently amended) The method according to claim 1 wherein the enzyme comprises a sequence of at least 30 amino acids identical to a contiguous region of amino acids 1 to 364 of SEQ ID NO: 4 and has α -galactosidase activity.

4. (Original) The method according to claim 1 wherein the enzyme has the amino acid sequence as set forth in SEQ ID NO: 4.

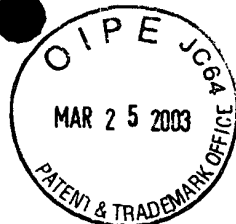
5. (Original) The method according to claim 1 wherein the enzyme is recombinantly produced.

C3 6. (Currently amended) The method according to claim 1 wherein the compound having the ~~α -galactose~~ α -glycosidic bond is raffinose.

7. (Currently amended) The method according to claim 6 wherein the ~~α -galactose~~ α -glycosidic bond is in raw beet sugar.

8. (Original) The method according to claim 1 wherein the compound is raffinose, stachyose, verbascose, or a combination thereof.

Applicant : Murphy, et al.
Serial No. : 09/619,032
Filed : July 19, 2000
Page : 5



Attorney's Docket No.: 09010-004004 / DIVER 1120-3

C4 9. (Currently amended) The method according to claim 8 wherein the compound is contained in a member of the lentil or bean family, or a combination thereof both.

10. (Original) The method according to claim 1 wherein the contacting is at a temperature of about 85° C.

11. (Original) The method according to claim 1 wherein the contacting is at a pH of about 9.5.

12. (Original) The method according to claim 1 wherein the contacting is at a temperature of about 85° C and a pH of about 9.5.

13. (New) The method according to claim 1 wherein the α -glycosidic bond is an α -1,6 galactosyl bond or an α -1,6 galactosidic bond.

5 14. (New) The method according to claim 1 wherein the enzyme has at least 95% amino acid identity to the amino acid sequence set forth in SEQ ID NO: 4 and has α -galactosidase activity.

15. (New) The method according to claim 1 wherein the enzyme comprises a sequence of at least 50 amino acids identical to a contiguous region of amino acids 1 to 364 of SEQ ID NO: 4 and has α -galactosidase activity.
